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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,829	08/20/2003	Manojkumar Saranathan	GEMS8081.169	1828
27061	7590	10/04/2007		
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (GEMS)			EXAMINER	
136 S WISCONSIN ST			MEHTA, PARIKHA SOLANKI	
PORT WASHINGTON, WI 53074			ART UNIT	PAPER NUMBER
			3737	
			NOTIFICATION DATE	DELIVERY MODE
			10/04/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/604,829	SARANATHAN ET AL.	
	Examiner	Art Unit	
	Parikha S. Mehta	3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 11-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 11-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment to paragraphs 23 and 24 of the specification is sufficient to overcome the previous objection to the specification, which is hereby withdrawn accordingly.
2. Applicant's amendment to claims 7-12, 25 and 26 is sufficient to overcome the previous rejection of the those claims under 35 U.S.C. 101, which is hereby withdrawn accordingly.
3. The previous objection to the drawings as indicated on the cover of the prior Office Action was made in error. The drawings are hereby accepted.
4. Applicant's arguments regarding the art rejections of claims 1-26 under 35 U.S.C. 102 and 103 have been considered but are moot in view of the new grounds of rejection.

Claim Objections

5. Claim 11 is objected to because of the following informalities: claim 11 recites dependence from claim 10, which is currently canceled. Examiner assumes Applicant intended claim 11 to depend from claim 7. Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-3, 5-8, 11-21, and 23-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Fayad et al (US PG Pubs. No. 2005/0010104), hereinafter Fayad ('104), previously made of record.

Regarding claims 1-3, 7, 8, 11, 13, 19, 20, 25 and 26, Fayad ('104) discloses a method and computerized system for multi-slice black blood double inversion recovery including steps for applying a double inversion recovery (DIR) pulse sequence in successive R-R intervals, wherein the DIR sequence constitutes the non-selective and inversion and re-inversion pulses claimed in the instant application. Following DIR, Fayad ('104) times a series of RF pulses to reduce the signal from blood (§ 0017), and acquires data for at least two slices for each application of the re-inversion pulse over successive R-R intervals (§ 0016, Fig. 1). Fayad ('104) states that the blood magnetization is not perfectly nulled, but that the resulting images are of acceptable quality (pp 7), which constitutes the blood being "near a null point" as claimed in the instant application. Fayad ('104) additionally acquires two sets of slice selections, each being in different R-R intervals (Fig. 1).

Regarding claims 5, 6, 12, 17, 23 and 24, Fayad ('104) discloses breath holding during the imaging protocol (§ 0028).

Regarding claims 14-16 and 21, Fayad ('104) uses two 180-degree pulses (0017) as claimed, and acquires MR data for multiple slices in each heartbeat of a successive train of heartbeats, wherein the slices in the first heartbeat are different from that of the next heartbeat (Fig. 1).

Regarding claim 18, Fayad ('104) includes a TI period between the re-inversion pulse and the series of excitation pulses (§ 0019, § 0024-0026).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 4 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fayad ('104) in view of Parker et al (Improved Efficiency in Double-Inversion Fast Spin-Echo Imaging. *Magnetic Resonance in Medicine*. 47:1017-1021. 2002.) hereinafter Parker (2002), previously made of record. Fayad ('104) substantially teaches all features of the present invention as previously discussed for claims 2 and 21. Fayad ('104) does not teach of alternating data acquisition of the two sets until k-space is filled. In the same field of endeavor, Parker (2002) teaches that alternating acquisition of two sets of data, or interleaving, results in the acquisition of more image data without substantially increasing acquisition time (p. 1018 col. 2). One of ordinary skill in the art at the time of invention would find it obvious to

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modify the method and system of Fayad ('104) to include the interleaving steps and means of Parker (2002) in order to improve data acquisition, as taught by Parker (2002).

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parikha S. Mehta whose telephone number is 571.272.3248. The examiner can normally be reached on M-F, 8 - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571.272.4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Parikha S. Mehta

Examiner – Art Unit 3737


BRIAN L. CASLER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3737